

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for identifying a specific amino acid residue dependent antibody to a target protein or peptide, which method comprises:

a) providing an antibody that binds to a target protein or peptide containing a specific amino acid residue;

b) contacting said antibody provided in step a) with a negative screening protein or peptide comprising said target protein or peptide wherein said specific amino acid residue is lacking or unavailable for binding with said antibody; and

c) assessing binding between said antibody and said target protein or peptide and assessing binding between said antibody and said negative screening protein or peptide, whereby identifying an antibody that binds to said target protein or peptide, but fails to bind to said negative screening protein or peptide, as a specific amino acid residue dependent antibody;

wherein said target protein or peptide comprises PTH(1-34) and said negative screening protein or peptide comprises PTH(2-34) and lacks the first amino acid residue of PTH, and said specific amino acid residue is the first amino acid residue of PTH.

2. (Original) The method of claim 1, wherein the antibody that binds to a target protein or peptide is provided by immunizing a mammal with an immunizing protein or peptide comprising said target protein or peptide or an immunizing nucleic acid encoding a protein or peptide comprising said target protein or peptide.

3. (Original) The method of claim 2, wherein the immunizing protein or peptide comprises more amino acid residue(s) than the target protein or peptide and the immunizing nucleic acid encodes a protein or peptide that comprises more amino acid residue(s) than the target protein or peptide.

4. (Original) The method of claim 2, wherein the immunizing protein or peptide is the target protein or peptide and the immunizing nucleic acid encodes the target protein or peptide.

5. (Original) The method of claim 1, wherein the antibody that binds to a target protein or peptide is provided by identifying an antibody that is known to bind to the target protein or peptide.

6. (Original) The method of claim 1, wherein the antibody binds to a target protein or peptide specifically.

7. (Original) The method of claim 1, wherein the target protein or peptide is a marker of parathyroid gland disease status, renal bone disease, osteoporosis, bone turnover status, the extent of partial or complete parathyroid gland removal.

8-12. (canceled)

13. (Original) The method of claim 1, further comprising attaching the identified specific amino acid residue dependent antibody to a surface of a solid phase device suitable for testing for a target protein or peptide.

14. (Original) The method of claim 1, further comprising attaching the identified specific amino acid residue dependent antibody to a label.

15-16. (Canceled)

17. (Currently Amended) A method for producing a specific amino acid residue dependent antibody to a target protein or peptide, which method comprises:

a) providing an antibody mixture wherein at least one of said antibodies in said mixture binds to a target protein or peptide containing a specific amino acid residue;

b) contacting said antibody mixture provided in step a) with a negative screening protein or peptide comprising said target protein or peptide wherein said specific amino acid residue is lacking or unavailable for binding with said antibody;

c) removing from said mixture an undesired antibody that binds to said negative screening protein or peptide; and

d) recovering from said mixture a desired antibody that binds to said target protein or peptide but fails to bind to said negative screening protein or peptide as a specific amino acid residue dependent antibody;

wherein said target protein or peptide comprises PTH(1-34) and said negative screening protein or peptide comprises PTH(2-34) and lacks the first amino acid residue of PTH, and said specific amino acid residue is the first amino acid residue of PTH.

18. (Original) The method of claim 17, wherein the negative screening protein or peptide is attached to a solid phase.

19. (Original) The method of claim 18, wherein the solid phase can be separated from the antibody mixture to remove undesired antibodies that bind to the negative screening protein or peptide.

20. (Original) The method of claim 17, wherein the antibody mixture is passed through a column comprising the negative screening protein or peptide affixed to a solid phase to retain an undesired antibody that binds to the negative screening protein or peptide in the column while allowing a desired antibody that does not bind to the negative screening protein or peptide to pass through.

21. (Original) The method of claim 17, further comprising a positive screen to collect the desired antibodies.

22. (Original) The method of claim 17, further comprising attaching the produced specific amino acid residue dependent antibody to a surface of a solid phase device suitable for testing for a target protein or peptide.

23. (Original) The method of claim 17, further comprising attaching the produced specific amino acid residue dependent antibody to a label.

24-47. (canceled)